Message

From: Morrie Lee [ml90@chrysler.com]
Sent: 2/29/2012 3:24:42 PM
To: Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]
Subject: FW: Hood Down and Variable speed fan request
Attachments: image001.png

Please reply with your concurrence to our request. We are pressed for time and need to move forward.

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From: Morrie Lee
Sent: Friday, February 17, 2012 3:12 PM
To: Joel Dalton (Dalton.Joel@epamail.epa.gov)
Cc: Stephen Healy (healy.stephen@epamail.epa.gov)
Subject: Hood Down and Variable speed fan request

As a follow up to yesterday's meeting, I am requesting approval of hood down and variable speed fan operation for our 14MY LDV 3.0L diesel DF determination, emissions and fuel economy testing.

> *(b) During dynamometer operation, a **fixed speed cooling fan shall be positioned** so as to direct cooling air to the vehicle in an appropriate manner with the engine compartment cover open. In the case of vehicles with front engine compartments, the fan shall be squarely positioned within 12 inches (30.5 centimeters) of the vehicle. In the case of vehicles with rear engine compartments (or if special designs make the above impractical), the cooling fan shall be placed in a position to provide sufficient air to maintain vehicle cooling. The fan capacity shall normally not exceed 5300 cfm (2.50 m3 /sec). However, **if the manufacturer can show that during field operation the vehicle receives additional cooling, and that such additional cooling is needed to provide a representative test, the fan capacity may be increased, additional fans used, variable speed fan(s) may be used, and/or the engine compartment cover may be closed, if approved in advance by the Administrator**. For example, the hood may be closed to provide adequate air flow to an intercooler through a factory installed hood scoop. Additionally, the Administrator may conduct certification, fuel economy and in-use testing using the additional cooling set-up approved for a specific vehicle.*

Here is a snapshot of intradepartment correspondence summarizing the justification.

Figure 1 – 3.0L WK Diesel operation on the chassis dynamometer with fixed speed and variable speed cooling fan

CONSTANT VEHICLE SPEED DATA						
	Hood Closed, Road Speed Fan			Hood Open, Fixed Speed Fan (8000 cfm - "FTP-type")		
Vehicle speed [m/h]	31	47	62	31	47	62
gear engaged	5	7	9	5	7	8
Engine speed [rpm]	1400	1350	1415	1360	1350	1425
Injected fuel [mg/stroke]	9.3	22	27	9.9	21	28
MAF Air temperature [°C]	31	31	32	36	34	32
CAC Temperature [°C]	29	29	30	35	30	29
Ambient temperature [°C]	28	28	27	28	28	28
Coolant temperature [°C]	87	87	87	87	86	87
Oil temperature [°C]	91	90	91	100	94	94
		On the bench with road speed fan, radiator fan does not turn on			On the bench with fixed speed fan, radiator fan turn on	

Please reply with your concurrence or follow-up.

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